

CLAIMS

What is claimed is:

- 1 1. A laminate circuit structure assembly comprising at least two modularized
2 circuitized voltage plane subassemblies wherein each of the subassemblies comprise at least
3 two signal planes having an external and internal surface disposed about an internal voltage
4 plane; dielectric between the signal and voltage planes; and dielectric on each external
5 surface of each signal plane; and wherein the subassemblies are bonded together with a
6 cured dielectric from a composition comprising the same dielectric used in said
7 subassemblies.

- 1 2. The laminate circuit structure of Claim 1 which further includes an
2 interposer located between the subassemblies wherein the interposer located between the
3 subassemblies comprises dielectric layers disposed about an internal electrically conductive
4 layer.

- 1 3. The laminate circuit structure of Claim 1 wherein the dielectric of at least
2 one of the surfaces that is bonded is from said composition.

- 1 4. The laminated circuit structure of Claim 1 wherein vias are disposed within
2 each subassembly for providing electrical communication between signal planes and
3 electrical connection to another subassembly.

- 1 5. The laminate circuit structure assembly of Claim 4 wherein the vias through
2 the signal planes are plated with a conductive metal.

1 6. The laminate circuit structure assembly of Claim 2 wherein the internal
2 electrically conductive layer of the interposer is copper.

1 7. The laminate circuit structure assembly of Claim 2 wherein the interposer is
2 about 3 mils to about 10 mils thick.

1 8. A method for fabricating a laminate circuit structure assembly which
2 comprises providing at least two modularized circuitized voltage plane subassemblies
3 wherein each of the subassemblies comprise at least two signal planes having an external
4 and internal surface disposed about an internal voltage plane; providing dielectric between
5 the signal and voltage planes; and providing dielectric on each external surface of each
6 signal plane; and providing a non-cured or partially cured curable dielectric composition
7 between the subassemblies wherein the dielectric composition comprises, the same
8 dielectric used in said subassemblies, aligning the subassemblies, and then laminating to
9 cause bonding of the subassemblies.

1 9. The method of Claim 8 which further comprises locating an interposer
2 between the subassemblies wherein the interposer comprises dielectric layers disposed about
3 an internal electrically conductive layer.

1 10. The method of Claim 9 wherein dielectric of at least one of the surfaces that
2 is to be bonded is from said dielectric composition.

1 11. The method of Claim 8 wherein vias are disposed within each subassembly
2 for providing electrical communication between signal planes and electrical connection to
3 another subassembly.

1 12. The method of Claim 11 wherein the vias through the signal planes are
2 plated with a conductive metal.

1 13. The method of claim 11 wherein the vias are filled with conductive adhesive.

1 14. The method of Claim 9 wherein the internal electricity conductive layer of
2 the interposer is copper.

1 15. The method of Claim 9 wherein the interposer is about 3 to about 10 mils
2 thick.

1 16. The method of Claim 8 which comprises providing top and bottom
2 circuit layers on top and bottom external surfaces of the assembly.

1 17. The method of Claim 8 wherein the laminating is carried out at about 100
2 to about 200°C, for about 15 minutes to about 90 minutes, and at a pressure of about 100
3 to about 500 psi.